

CLMPTO

10/19/01

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1. A method for extracting a face from a still image or moving image using color distortion information, the method comprising the steps of:

extracting the color distortion information from the given image;

determining a skin color range in a color space using the extracted color distortion information; and

extracting the face by extracting a skin color region using the determined skin color range.

2. A face extraction method using color distortion information, comprising the steps of:

extracting the color distortion information with respect to either of two frames when the two frames are inputted for a predetermined time;

determining a skin color range in a color space using the extracted color distortion information;

extracting a skin color region using the determined skin color range;

extracting a difference image between the two input frames;

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obtaining a region that has a skin color and a motion is produced by logically multiplying the extracted difference

image and the skin color region;

designating a region satisfying a face ratio among the obtained regions as a candidate of the face; and

identifying the candidate of the face by a template matching.

3. (Amended) The method as claimed in claim 1[ or 2], wherein the color distortion information is hue information.

4. The method as claimed in claim 3, wherein the step of extracting the color distortion information comprises the steps of:

dividing an image into  $N \times M$  partial regions;

obtaining an average hue value of pixels having a chroma above a predetermined threshold, and a variance of hue values for the pixels concerned in the average hue value with respect to all the divided regions;

re-averaging average hue values obtained in the respective regions with respect to regions satisfying a condition that the variance is below a predetermined threshold, and obtaining a variance of the average hue values concerned in the re-averaging; and

designating the re-averaged average hue value as the hue value of the color distortion information.

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5. The method as claimed in claim 3, wherein the step of determining the skin color range in the color space using the extracted color distortion information comprises the steps of:

predetermining entire skin color range in the specified color space;

determining partial skin color ranges to be applied in a certain given image within the predetermined entire skin color range;

comparing the hue of the extracted color distortion information with representative hues of the partial skin color ranges; and

determining a partial skin color range that its representative hue is closest to the hue of the color distortion information as a skin color range of the given image.

6. The method as claimed in claim 5, wherein the representative hue of the partial skin color range is the average hue of the pixels that belongs to the partial skin color range.

7. The method as claimed in claim 3, wherein the step of determining the skin color range in the color space using the extracted color distortion information comprises the steps of:

predetermining the entire skin color range in the

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specified color space;

determining partial skin color ranges in the entire skin color range, based on the hue of the color distortion information; and

determining the partial skin color range corresponding to the hue of the extracted color distortion information as the skin color range of the given image.

8. (Amended) The method as claimed in claim 1 [or 2], wherein the color distortion information extracted by the above process is luminance information.

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9. The method as claimed in claim 8, wherein the color distortion information is extracted based upon an average luminance of the pixels having a chroma below a predetermined threshold value.

10. The method as claimed in claim 8, wherein the step of determining the skin color range in the color space using the color distortion information extracted as the luminance information comprises steps of:

predetermining the entire skin color range in the specified color space;

determining partial skin color ranges in the entire skin color range, based upon the luminance information of the color

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distortion information; and

determining a partial skin color range corresponding to the luminance of the extracted color distortion information as the skin color range of the given image.